

## Isolation and identification of Rotavirus and Helicobacter pylori for children under 10 years of age who suffer from stomach and intestinal pain in Basrah city

Ahmed Hamid Dawood Alatbee

Southern Technical University /Basrah Technical Institute, Community Health Technologies Department/ Basrah-Iraq  
ahmed.dawood@stu.edu.iq

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- Rota virus

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### ABSTRACT

Two different sets of 100 samples were studied to investigate viral and bacterial causes of gastrointestinal pain in children under the age of ten. Where it was found in the first group that the percentage of infection with rotavirus amounted to 42% of the total samples that were taken. The study showed that the lower the age, the higher the incidence of rotavirus. In addition, that the infection of females and males was almost similar in the first group that was investigated to detect rotavirus as one of the causes of stomach and intestinal pain. While the study included in the second group that the infection rate of H. pylori bacteria amounted to 26% of the total samples examined, which amounted to 100 samples. The study also showed that the higher the age, the higher the rate of H. pylori infection, and indicated that the infection in males was higher than in females. When comparing the two groups, it was found that H. pylori infection in the second group was more than the first group, indicating that most stomach and intestinal pain in children under the age of ten were caused by bacteria, followed by a viral infection with rotavirus.

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### 1. Introduction

A Brief History of (Pylori Helicobacter) pylori-h was first identified in crypto-rabs in 1981 (Brenner 2003 & Rothenbacher) and were described in humans in 1817, then The stomach bacterium (Helicobacter pylori) was discovered in the year 1895 AD by Robin warren and Barry Marshall And its role in causing most cases of ulcers and gastritis). health medicine 2016 (Retrieved), but their discovery was rejected and apathy because this was contrary It is believed that stress or spicy food is the cause of infections And peptic ulcer, so in order to prove the validity of this hypothesis, Marshall drank a bowl Petri containing a culture of live organelles extracted from the stomach A patient (2007.al.et Moreno) soon developed gastritis which disappeared Symptoms of infection within two weeks, but he took antibiotics to eliminate the remainder of the bacteria, and Karolinska Institutet in Stockholm awarded the Nobel Prize in Medicine and Physiology for their discovery of the role of Helicobacter pylori in Gastritis and peptic ulcer (2007).( Andam CP, Fournier GP, Gogarten ) &(Atkinson W, Hamborsky J).

Humans have known diarrheal disease since ancient times. early 1970s, the viral, parasitic bacterial, , or etiology of childhood diarrhea using electron microscopy . In 1973, Ruth Bishop in noticed virus particle in the intestinal tissues of children with diarrheaa . This virus was later called "rotavirus" because of its similarity in appearance to a wheel (Latin Rota meaning wheel). ) Herring AJ, Inglis NF, Ojch CK, Snodgrass DR, Menzies JD(. Diarrhea is common in children. Fall diarrheaa, which is a subclass of this disease, is mostly caused by human rotavirus (HRV)). Jing Q, Yang JH, Wang T, Wang Y, Lu BJ, Bai X, Zhang L). Rota virus is most commone specially those who spend time in child care facilities children between the ages of 5 to 30 months,.The risk of infection is increased in older adults and adults taking care of young children.)Bowen M,Mijatovic-Rustempasic , Esona ).

The most important causes of rotavirus for children and adults is that it is present in the stool of the infected person. When using the bathroom and not adhering to washing hands properly, it may lead to the transmission of the virus to anything that the person can touch or eat. The virus can be transmitted from the infected person to others at the time of the appearance of symptoms. Or before or even after a person has recovered from the virus.( Baker J, Tate J,SteinerC . &Yang JH, Wang T, Wang Y, Lu BJ, Bai X, Zhang L). If you have rotavirus and don't wash your hands after using the toilet, or your child has the

virus and you don't wash your hands after changing their diaper or helping them use the toilet, the virus can be transferred to anything you touch. (Boto L, Martinez JL.)

### Principle for H. pylori:-

The test utilizes antibodies including a HP polyclonal antibody and rabbit anti-mouse IgG antibody (polyclonal antibody) The detector is used to detect HP antigen in the sample according to the principle of dual antibody sandwich method and gold immunochromatography on a colloidal gold nitrocellulose membrane that was labeled with an anti-HP antibody as a tag tracer.

## 2. Methodology

1. H.pyloi kit 2- Rota virus kit 3- cub stool 4- Timer 5- pipette

### 2.1 Sample Collection

1. feces samples Collection.
2. Test immediately after After collecting the sample., For 48 hours prior to examination.
3. Use fresh samples which repeat freeze and thaw for many times can not be used.

### 2.2 Test method:

Open the cassette cover .Break off the cap of the sample tube, drop 3 drops (80-100pL) of diluted sample vertically into the sample adding area of the strip of the casset.

Watch Results at 10-15 min.

### 2.3 Specimen and sample preparation for Rota virus :

We prepare an approximate 10% stool suspension of the stool sample by adding 0.1mL/0.1 g to 1.0 mL of extraction solution in a screw-capped tube. Mix well. Stand at room temperature for one to two minutes.

### 2.4 Test method:

Step 1 : Close the tube with the sample diluent and the stool sample. Shake the tube to ensure that the sample is well disperse.

Step 2: Snip the end of the cap and dispense 4 drops into the circular window.

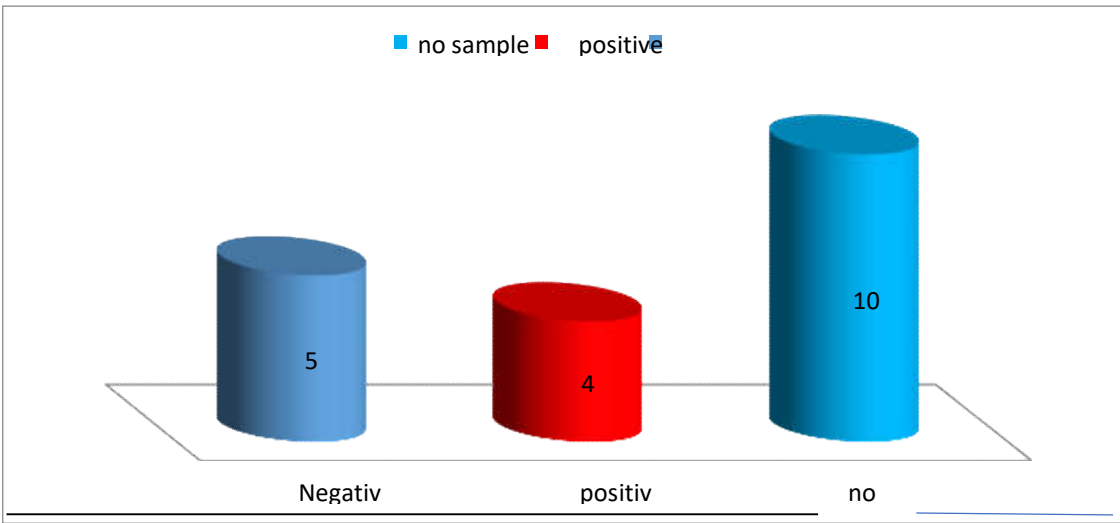
Step 3: Wait until the colored bands appear. Read results in 10 minutes.

## 3. Results and Discussion

Two different sets of stool samples were studied to look for causes of stomach and intestinal pain in children under 10 years of age. Group 1: A total of 100 different stool samples were studied to check for the presence of rotavirus in children under the age of ten. The second

group : Another 100 samples were studied to study H. pylori infection in children. To examine the bacterial and viral causes of stomach and intestinal pain in children under 10 years old.

- 3.1 In the first group, the results showed that 42 people were infected with rotavirus out of 100 samples that were examined Figures:[1]:

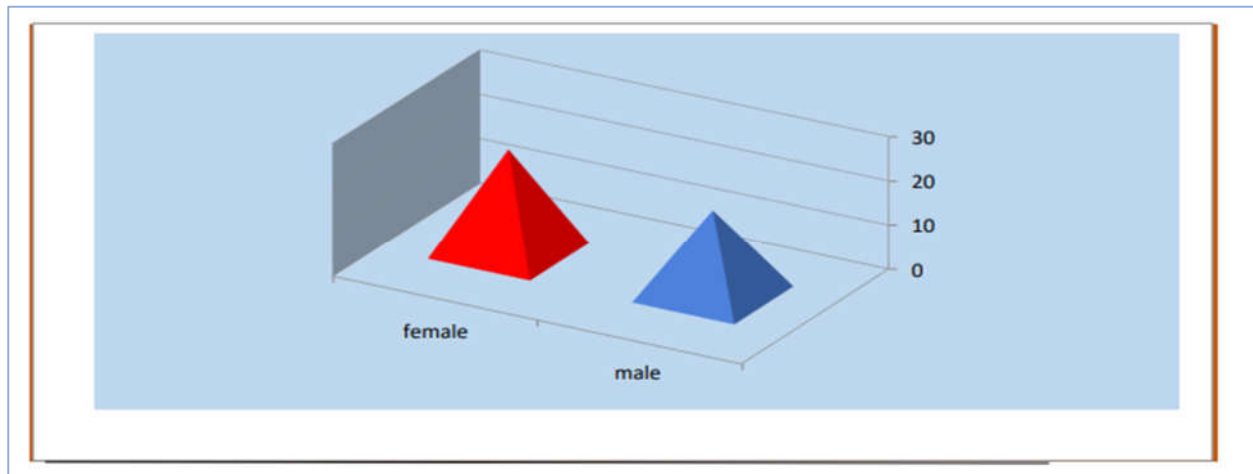


Figures (10): Show the percentage of positive and negative infection by Rota virus



Figure (2): Show the percentage of Rota virus Infections at different age groups.

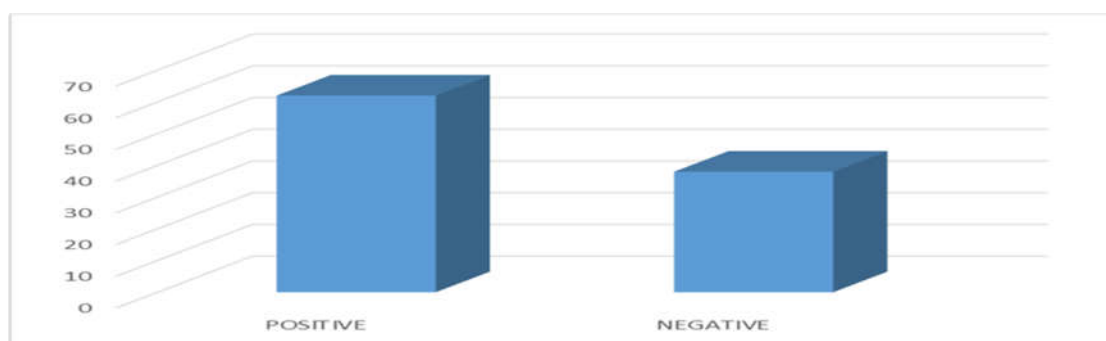
Figures (2) Show increase in the infection of rotavirus in children less than a year than in other ages, as the number of infections for less than a year reached 7 people, while there was a decrease in the number of infections with increasing age.



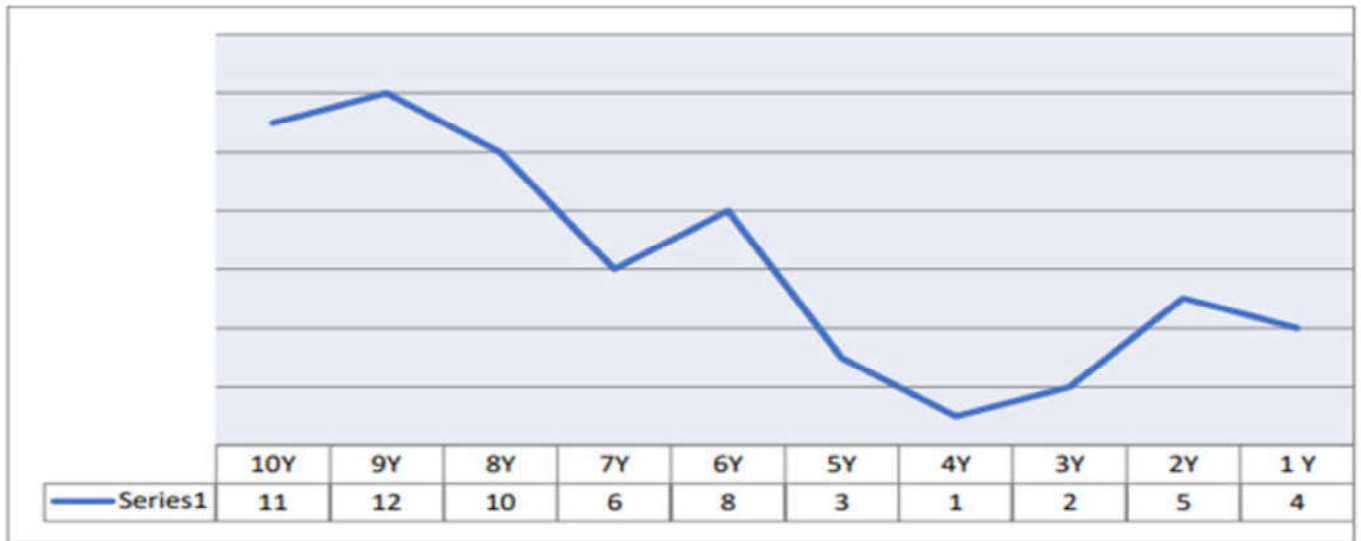
Figures (3): Show that the infection rates with Rota virus in males & females

Figure (3) shows that the infection is more common in females than in males, but at a small percentage. The number of infected females reached 23 out of infected persons, and infected was 19. While three of the children were diagnosed with cancerous tumors, which may explain that the rotavirus may be a risk factor.

3. 2 In the Second group a study of 100 samples of children less than 10 years old suffering from stomach and intestinal pain to identify their infection with the H. pylori bacteria. The results showed that 62 children were infected with Helicobacter pylori in different areas of Basra out of all samples.



Figures (4) Show the percentage of positive and negative infection by H.PYLORI



Figures (5) Show the percentage of H.PYLORI infections at different age groups

Figure No. 5 shows the ages of people infected with H. pylori bacteria, where the infections increased at the ages of 8, 9 and 10, respectively, which shows that these ages are more susceptible to infection due to eating foods contaminated with bacteria and drinking water from public places.

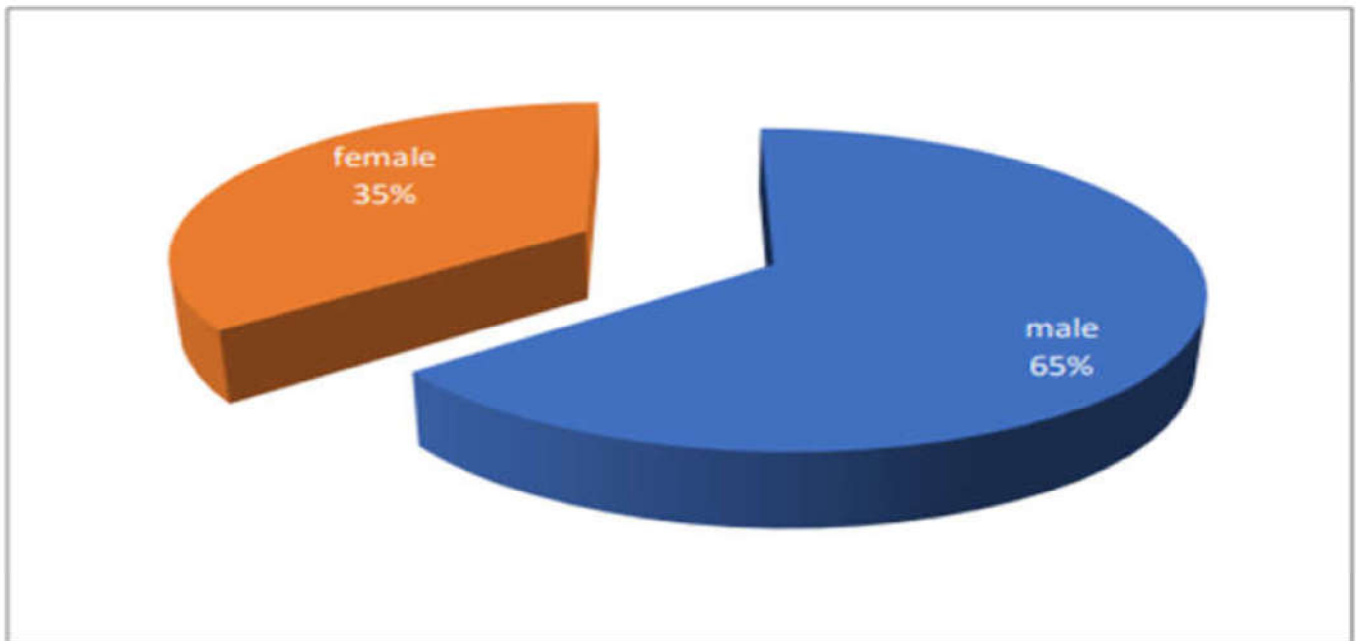


Figure (6) Show infection rates with H.PYLORI in males & females

Figure No. 6 shows an increase infection in the percentage of among males, reaching 65% compared to females, which amounted to 35% of the total infections. The reason is that males go out and play more outside the home than females, and consume more contaminated food and water from restaurants and fast food stores.

#### 4. Conclusion

1. Ensure that the child is given the rotavirus vaccination, as vaccination is the best and very effective way to prevent rotavirus infection.
2. Avoid using contaminated laboratory tools to prevent transmission of infection, as well as personal tools.
3. Care and attention to cleaning your child after the bathroom and washing hands with soap and an antiseptic that eliminates viruses.
4. The analysis and equipment for rotavirus must be available in hospitals and health centers to detect and diagnose cases of infection early.

(B) H-pylori infection: -

1. Wash your hands with soap.
2. Food should be cooked well to eliminate any bacteria present.
3. Don't use any impersonal tools: because they can lead to easy transmission.
4. Stop interacting with infected people : When someone has a stomach germ, you should avoid interacting with him.

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